~~OPPOSING CONICAL PRELOADED ELASTOMERIC BEARING ASSEBMLY~~

ABSTRACT OF THE DISCLOSURE

The invention provides a weight-reducing bearing assembly for rotary aircraft. An opposed tapered conical elastomeric flap bearing assembly for rotary aircraft includes an outer housing having an outer surface and an inner surface. The outer surface is configured to mechanically connect the bearing assembly to the attachment sections of the hub center body. The inner surface is configured to receive a pair of opposed taper conical bearing elements. An inboard bearing element and an outboard bearing element are located within the outer housing. The bearing elements are arranged in an opposed manner. An axial pre-load can be applied to the opposed bearing assembly wherein the resulting force couple bearing pre-load path is maintained entirely within the bearing assembly. Consequently, the weight of the main rotor hub is reduced increasing the efficiency of rotary flight.

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